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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/955,764	09/19/2001	Jun Li	10007965	9833

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EXAMINER	
RUTTEN, JAMES D	

ART UNIT	PAPER NUMBER
2192	

DATE MAILED: 12/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/955,764	LI ET AL.	
	Examiner	Art Unit	
	J. Derek Rutten	2192	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 September 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-43* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-43* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Acknowledgement is made of Applicant's amendment dated 19 September 2005, responding to the 17 June 2005 Office action provided in the rejection of claims 1-43, wherein no claims have been amended. Claims 1-43 remain pending in the application and have been fully considered by the examiner.

Response to Arguments

2. Applicant's arguments, see page 14 paragraph 1, filed 9/19/2005, with respect to the rejection of claims 1-7, 9-11, 13-19, 21-32, and 35-42 under 35 U.S.C. § 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground of rejection is made in view of U.S. Patent 4,819,233 to Delucia et al.

3. Applicant's arguments, see page 15 paragraph 2, filed 9/19/2005, with respect to the rejection of claims 1-7, 9-11, 13-19, 21-32, and 35-42 under 35 U.S.C. § 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground of rejection is made in view of U.S. Patent 6,151,639 to Tucker et al.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-7, 9-11, 13-19, 21-32, and 35-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over prior art of record "JaViz: A client/server Java profiling tool" by Kazi et al. (hereinafter referred to as "Kazi") in view of "Automatic Insertion of Performance Instrumentation for Distributed Applications" by Blumson et al. (hereinafter referred to as "Blumson") in view of U.S. Patent 4,819,233 to Delucia et al. (hereinafter "Delucia"), in view of U.S. Patent 6,151,639 to Tucker et al. (hereinafter "Tucker").

As per claim 1, Kazi discloses:

A monitoring method for a component-based software system operating over one or more processing devices See Kazi page 1, Abstract:

> The JaViz performance analysis tool generates **execution traces** with sufficient detail to determine program hot spots, **including remote method calls**, in a **distributed Java application** program

also page 8 paragraph 3:

> ...executing on a physically distributed **processor**.

comprising the steps of:

initiating an invocation of a second software component from within an execution of a first software component See Kazi page 8 paragraph 3 under "Client/server trace generation":

> The Java remote method invocation (RMI) facility allows **one Jvm to execute a method on another Jvm**, which may be executing on a physically distributed processor.

recording a stub start log data including a global causal identifier <within microseconds of> said invocation of said second software component See Kazi page 7 last paragraph under "Detailed trace generation":

> The trace generation module of **the Jvm is modified** to **record every invocation** of a method using time stamps that **show the start and end times** of the method with microsecond resolution.

also page 5 paragraph 3:

> In addition to the parent-child links to reflect the call graph, each record contains such information as the number of methods invoked by this method, the time when the method started, the time when it completed, the thread executing this method, the **method identifier** of the method call being represented, and the specific Jvm on which the method is executed.

wherein the second software component executes on a separate thread and in a system remote from the first software component; See fourth full paragraph on page 8:

> To trace client/server activities through RMI, every object to be exported to a **remote Jvm** is given a **unique identifier** automatically by the server Jvm. Similarly, each method that can be remotely invoked in an exported object is also given a unique (within a class) identifier by the RMI module. For every remote method invoked through RMI, **JaViz's modified Jvm records these identifiers at both the client side and the server side.**

recording a stub end log data including the global causal identifier in said instrumented stub after a response is received from said invocation of said second software component, said response including the global causal identifier See Kazi page 7 last paragraph, and pages 4 and 5 as cited above.

wherein said stub start log data and said stub end log data gather runtime information about execution of said second software component within said component-based software system See Kazi page 7 last paragraph:

> "Additionally, a thread identifier is recorded to uniquely identify the thread executing the method.

Kazi does not expressly disclose an instrumented stub, recording log data *before* invocation, or *transmitting the global causal identifier from the first software component to the second software component.*

However, in an analogous environment, Blumson teaches instrumenting a stub to collect runtime data. See page 6, Section 6.1: "Our IDL compiler has an additional command-line flag...to **insert instrumentation.**" It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Blumson's stub instrumentation implementation in Kazi's instrumented jvm. One of ordinary skill would have been motivated to take measurements on certain operations such as marshalling time that are otherwise difficult, while maintaining a relatively simple implementation versus modification of a runtime library.

While Kazi discloses that log data is recorded with microsecond resolution (Kazi page 7 last paragraph under "Detailed trace generation"), Kazi does not expressly disclose whether this data is recorded before or after invocation. However, in an analogous environment, Delucia teaches that data can be recorded before and after invocation. See column 2 lines 37-42:

> Where the target code unit calls another routine, executable write instructions are inserted by a processor before and after the call statement to generate in the output documentation an indication that the call statement was reached and that the program returned to the correct location after the call.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Delucia's teaching of code instrumentation techniques with Kazi's instrumented JVM. One of ordinary skill would have been motivated to place

instrumentation before and after a call as an indication that the call completed successfully (Delucia column 2 lines 41 and 42).

Kazi discloses that global method identifiers are used at both the server and the client. See page 9 3rd paragraph:

> The client entry indicates that it is an RMI call to **Object 25 for Method 5** on the server... The corresponding entry in the server profile indicates that it is an incoming RMI call from the client on Machine cslnt3.cs.umn.edu through Port 4667 for **Method 5 on Object 25.**

Kazi does not expressly disclose how the same identifiers appear at both the client and the server. However, in an analogous environment, Tucker teaches that identifiers can be transmitted between remote machines. See column 3 lines 22-24:

> The system-wide identifier is transmitted in a remote object invocation request to the appropriate remote node 102b.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Tucker's teaching of transmitting identifiers with Kazi's identifiers. One of ordinary skill would have been motivated to transmit identifiers when a network connection is available, but a shared file system is not present (Tucker column 1 lines 14-17).

In regard to claims 2-7, 9-11, 13-19, and 21-28, the above rejection of claim 1 is incorporated. All further limitations have been addressed in the previous Office action dated June 7, 2004.

As per claim 29, Kazi discloses: *processing an accumulated log data and calculating a system behavior characteristic for one or more software components executing within said component-based software system* See page 5 paragraph 2:

> The tree generation step **analyzes the merged trace files to create an output file containing the dynamic execution tree** for a given client or server program. This output file is used by the visualizer to display the call graph.

All further limitations have been addressed in the above rejections of claims 1 and 9.

In regard to claims 30-32 and 35, the above rejection of claim 29 is incorporated. All further limitations have been addressed in the previous Office action dated June 7, 2004.

As per claim 36, Kazi discloses a computer system (Figure 3). All further limitations have been addressed in the above rejection of claim 1.

In regard to claims 37-42, the above rejection of claim 36 is incorporated. All further limitations have been addressed in the previous Office action dated June 7, 2004.

6. Claims 8, 12, and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Kazi, Blumson, Delucia, and Tucker as applied to claim 7, 9, and 36, respectively above, and further in view of prior art of record U.S. Patent 5,522,073 to Courant et al. (hereinafter referred to as "Courant").

In regard to claims 8 and 12, the above rejection of claim 1 is incorporated. All further limitations have been addressed in the previous Office action dated June 7, 2004.

In regard to claim 43, the above rejection of claim 36 is incorporated. All further limitations have been addressed in the previous Office action dated June 7, 2004.

7. Claim 20 rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Kazi, Blumson, Delucia, and Tucker as applied to claim 9 above, and further in view of prior art of record U.S. Patent 5,146,593 to Brandle et al. (hereinafter referred to as "Brandle").

In regard to claim 20, the above rejection of claim 1 is incorporated. All further limitations have been addressed in the previous Office action dated June 7, 2004.

8. Claims 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Kazi, Blumson, Delucia, and Tucker as applied to claim 29 above, and further in view of prior art of record "Unix Power Tools" by Peek et al. (hereinafter referred to as "Peek").

In regard to claims 33 and 34, the above rejection of claim 29 is incorporated. All further limitations have been addressed in the previous Office action dated June 7, 2004.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to J. Derek Rutten whose telephone number is (571) 272-3703. The examiner can normally be reached on T-F 6:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on (571) 272-3695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jdr

TUAN DAM
SUPERVISORY PATENT EXAMINER